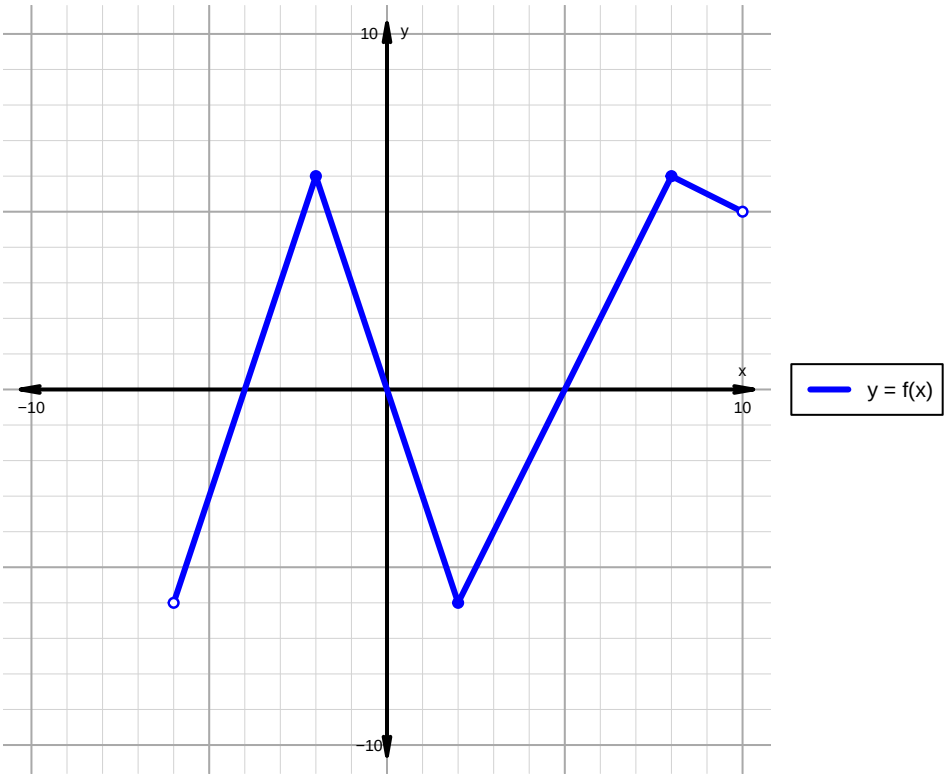
Name: Date:

Intervals, Transformations, and Slope Solution (version 38)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4, 0) \cup (5, 10)$
Negative	$(-6, -4) \cup (0, 5)$
Increasing	$(-6, -2) \cup (2, 8)$
Decreasing	$(-2, 2) \cup (8, 10)$
Domain	$(-6, 10)$
Range	$(-6, 6)$

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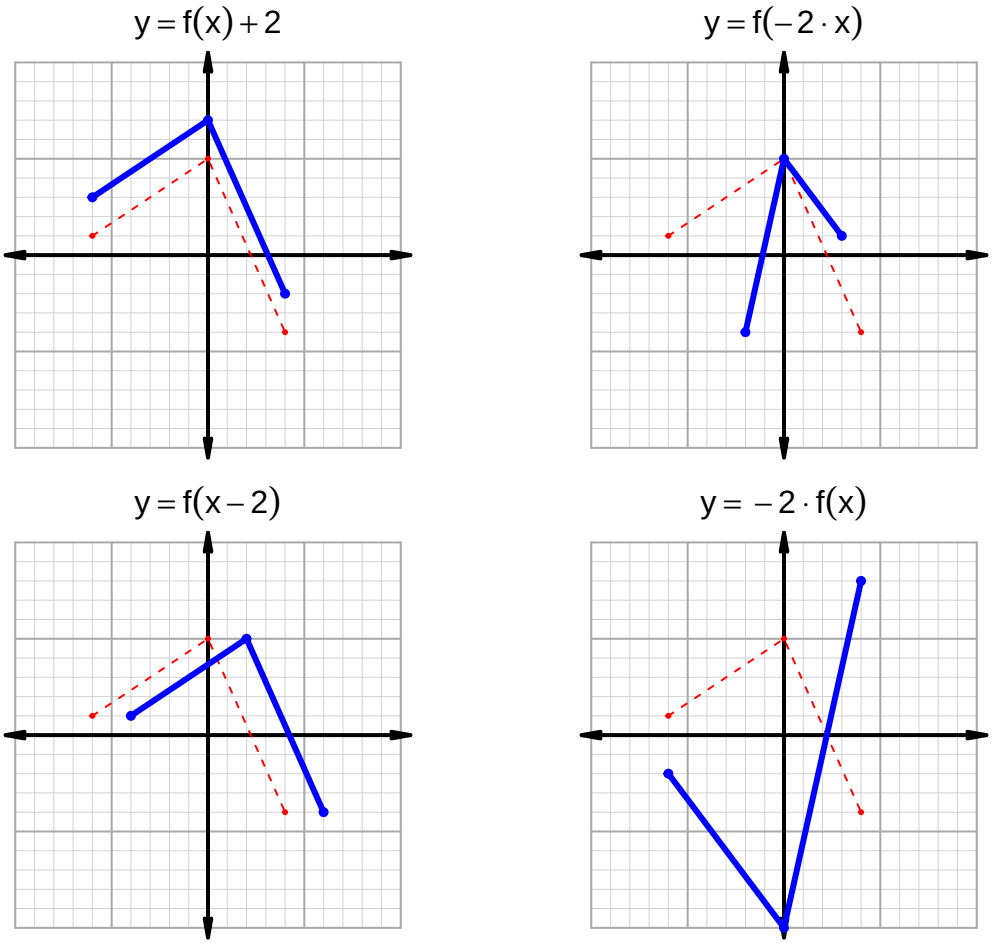
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 36$ and $x_2 = 76$. Express your answer as a reduced fraction.

x	$g(x)$
36	88
43	36
76	43
88	76

$\frac{f(76)-f(36)}{76-36} = \frac{43-88}{76-36} = \frac{-45}{40}$

The greatest common factor of -45 and 40 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{8}$$